

Title (en)
LIQUID CRYSTAL DISPLAY APPARATUS

Title (de)
FLÜSSIGKRISTALLANZEIGEVORRICHTUNG

Title (fr)
APPAREIL D'AFFICHAGE À CRISTAUX LIQUIDES

Publication
EP 2434332 A4 20130102 (EN)

Application
EP 10793882 A 20100305

Priority
• JP 2010053634 W 20100305
• JP 2009157778 A 20090702

Abstract (en)
[origin: EP2434332A1] In a liquid crystal display apparatus (1) comprising: a liquid crystal panel (2); an illuminating device (3) for irradiating the liquid crystal panel (2) with illumination light; and an outer casing for accommodating the liquid crystal panel (2) and the illuminating device (3), the outer casing includes a bezel (4) provided on the liquid crystal panel (2) side and a frame (frame member) (5) configured so as to be contained within the bezel (4) and having side walls (5b) to which a mounting board (9) on which light-emitting diodes (8) are mounted is attached. A protruding portion (thermally conductive portion) (14) for transferring heat generated by the light-emitting diodes (8) from the frame (5) side to the bezel (4) side is provided between the side surface (4b) of the bezel (4) and the side wall (5b) of the frame (5).

IPC 8 full level
G02F 1/1333 (2006.01); **G02B 6/00** (2006.01); **G02F 1/13357** (2006.01)

CPC (source: EP US)
G02B 6/0085 (2013.01 - EP US); **G02F 1/133615** (2013.01 - EP US); **G02F 1/133308** (2013.01 - EP US); **G02F 1/133628** (2021.01 - EP US)

Citation (search report)
• [XI] US 2009160745 A1 20090625 - KIM TAEK-YOUNG [KR]
• [X] JP 2008020557 A 20080131 - EPSON IMAGING DEVICES CORP
• [A] JP 2008186780 A 20080814 - MITSUBISHI ELECTRIC CORP
• [A] JP 2006216244 A 20060817 - TOSHIBA MATSUSHITA DISPLAY TEC
• See references of WO 2011001711A1

Cited by
EP2793073A1; EP3200020A1; US9335578B2; US10591765B2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)
EP 2434332 A1 20120328; EP 2434332 A4 20130102; BR PI1015583 A2 20160426; CN 102472909 A 20120523; JP 5285153 B2 20130911; JP WO2011001711 A1 20121213; RU 2011146532 A 20130527; US 2012099045 A1 20120426; WO 2011001711 A1 20110106

DOCDB simple family (application)
EP 10793882 A 20100305; BR PI1015583 A 20100305; CN 201080029883 A 20100305; JP 2010053634 W 20100305; JP 2011520806 A 20100305; RU 2011146532 A 20100305; US 201013320917 A 20100305